United States Government Accountability Office

Report to Congressional Committees

May 2013

# DEFENSE INFRASTRUCTURE

# Navy's Analysis of Costs and Benefits Regarding Naval Station Mayport Demonstrated Some Best Practices and Minimally Addressed Other Requirements

GAO-13-501

# Report Documentation Page

*Form Approved*
*OMB No. 0704-0188*



| 1. REPORT DATE | 2. REPORT TYPE | 3. DATES COVERED |
|---|---|---|
| **MAY 2013** | | **00-00-2013 to 00-00-2013** |

| 4. TITLE AND SUBTITLE | 5a. CONTRACT NUMBER |
|---|---|
| **Defense Infrastructure: Navy's Analysis of Costs and Benefits Regarding Naval Station Mayport Demonstrated Some Best Practices and Minimally Addressed Other Requirements** | 5b. GRANT NUMBER |
| | 5c. PROGRAM ELEMENT NUMBER |
| 6. AUTHOR(S) | 5d. PROJECT NUMBER |
| | 5e. TASK NUMBER |
| | 5f. WORK UNIT NUMBER |
| 7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)<br>**U.S. Government Accountability Office,441 G Street NW,Washington,DC,20548** | 8. PERFORMING ORGANIZATION REPORT NUMBER |
| 9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) | 10. SPONSOR/MONITOR'S ACRONYM(S) |
| | 11. SPONSOR/MONITOR'S REPORT NUMBER(S) |

12. DISTRIBUTION/AVAILABILITY STATEMENT
**Approved for public release; distribution unlimited**

13. SUPPLEMENTARY NOTES

14. ABSTRACT

15. SUBJECT TERMS

| 16. SECURITY CLASSIFICATION OF: | | | 17. LIMITATION OF ABSTRACT | 18. NUMBER OF PAGES | 19a. NAME OF RESPONSIBLE PERSON |
|---|---|---|---|---|---|
| a. REPORT | b. ABSTRACT | c. THIS PAGE | | | |
| **unclassified** | **unclassified** | **unclassified** | **Same as Report (SAR)** | **25** | |

May 2013

# DEFENSE INFRASTRUCTURE

## Navy's Analysis of Costs and Benefits Regarding Naval Station Mayport Demonstrated Some Best Practices and Minimally Addressed Other Requirements

GAO Highlights

Highlights of GAO-13-501, a report to congressional committees

### Why GAO Did This Study

Over the next couple of years, maintenance work available to the ship repair industrial base supporting Naval Station Mayport is expected to decrease. Section 1017 of the National Defense Authorization Act for Fiscal Year 2012 required the Navy to analyze the costs and benefits of stationing additional DDG-51 class destroyers at Naval Station Mayport and to include other considerations. It also required GAO to provide an assessment of the Navy's analysis. The Navy provided its analysis in a report submitted to Congress on December 31, 2012.

GAO's objectives were to describe the extent to which the Navy's analysis (1) demonstrated the use of applicable best practices for an analysis of costs and benefits and (2) provided information on other considerations, as required by Section 1017. In conducting our assessment, GAO identified applicable best practices for analyzing costs and benefits and discussed the Navy's documentation and methodology with knowledgeable officials. GAO also reviewed the information in the Navy's analysis, interviewed Navy and private ship repair firm officials, and visited Naval Station Mayport.

GAO is not making recommendations in this report. DOD and the Department of the Navy reviewed a draft of this report and did not have formal comments. The Navy provided technical comments that were incorporated as appropriate in the report.

View GAO-13-501. For more information, contact Brian Lepore at (202) 512-4523 or leporeb@gao.gov.

### What GAO Found

The Navy's analysis of the costs and benefits of stationing additional DDG-51 class destroyers at Naval Station Mayport, Florida, demonstrated some applicable best practices for analyzing costs and benefits. GAO identified eight applicable best practices and applied them to the Navy's discussion of the costs and benefits of stationing DDG-51 class destroyers at Naval Station Mayport. GAO found that the Navy demonstrated the best practices of clearly defining a problem statement and objectives, and including key facts and assumptions. The Navy partially demonstrated the best practices of estimating costs and benefits, and identifying and discussing uncertainty. However, the Navy's analysis did not demonstrate the best practice of describing alternatives, and therefore, it did not compare alternatives or contain recommendations about them.

Navy's analysis minimally addressed other requirements, and it did not provide some information that would have been useful for oversight and decision making.

| Information required by Section 1017 | GAO's assessment |
|---|---|
| Consideration of negative effects on the ship repair industrial base at Mayport caused by the retirement of FFG-7 class frigates and delays in procurement of Littoral Combat Ships—including, in particular, increased costs (which would be passed on to the taxpayer) of reconstituting the ship repair industrial base at Mayport following the projected drastic decrease in workload. | The Navy provided an explanation of the retirement of the FFG-7 class frigates at Naval Station Mayport; discussed one negative effect—work days would be lost due to the retirements of the frigates—and stated that the Navy plans to station other ships to compensate for the lost workload. However, the analysis did not specifically address how the reduction in workload could affect local ship repair firms, explicitly discuss the procurement delay of the Littoral Combat Ship, or thoroughly describe the cost of reconstituting the ship repair industrial base at Mayport. Additionally, GAO believes that including the views of the ship repair industry at Mayport would have been beneficial. |
| Updated consideration of life extensions of FFG–7 class frigates in light of continued delays in deliveries of the Littoral Combat Ship. | The Navy concluded that extending the service life of the FFG-7 class frigates would be cost prohibitive, but the analysis relied on 2010 data that was not updated to reflect current circumstances. Additionally, Navy officials told GAO that the Navy could consider slowing down the decommissioning of the frigates if the Littoral Combat Ships are significantly delayed, but the analysis did not fully discuss that option. |
| Consideration of the possibility of bringing additional surface warships to Naval Station Mayport for maintenance with the consequence of spreading the ship repair workload appropriately amongst the various public and private shipyards and ensuring the long-term health of the shipyard in Mayport. | The Navy's analysis discussed the Navy's intention to transfer surface ships to Mayport and that the Navy strives to maintain a steady maintenance workload at all its homeports, but it did not specifically address the effect that the Navy's plan could have on the distribution of the workload among the ship repair industrial base at public and private shipyards. |

# Contents



Tables

## Abbreviation

| | |
|---|---|
| DOD | Department of Defense |

U.S. GOVERNMENT ACCOUNTABILITY OFFICE
441 G St. N.W.
Washington, DC 20548

May 23, 2013

Congressional Committees

Until February 2012, the Navy planned to establish a homeport for a nuclear aircraft carrier at Naval Station Mayport, Florida—the second largest naval base on the eastern coast of the United States—by 2019. However, with lower projected defense budgets anticipated over the next several years, the Navy decided to defer moving a nuclear aircraft carrier to Mayport. Additionally, several FFG-7 class frigates and CG-47 class cruisers currently stationed at Naval Station Mayport are scheduled to be decommissioned by fiscal year 2015. These force structure changes will significantly reduce the potential available work days[1] for the private ship repair industrial base[2] that supports Naval Station Mayport. To minimize the impact of these reduced work days and balance the strategic and operational capabilities across the Navy and at the naval station, the Navy intends to transfer a three-ship Amphibious Ready Group[3] during fiscal year 2014, three DDG-51 class destroyers by fiscal year 2014, and three Patrol Coastal Craft—two in 2014 and one in 2015—to Naval Station Mayport. Navy plans also call for homeporting the new Littoral Combat Ship at Naval Station Mayport beginning in fiscal year 2016, with up to eight of these ships currently scheduled to arrive there by 2020.

Section 1017 of the National Defense Authorization Act for Fiscal Year 2012 required the Secretary of the Navy, not later than one year after the enactment of the act, to conduct an analysis of the costs and benefits of stationing additional DDG-51 class destroyers at Naval Station Mayport,

[1] Although the Navy uses the industrial term “manday” when referring to ship maintenance, for purposes of this report we use the term work day. Both refer to the industrial unit of production equal to the work one person can produce in a day.

[2] For the purpose of this report we define the ship repair industrial base as the private ship repair firms, including the smaller firms and temporary labor with which they work, that support Navy ship repair, maintenance, and modernization requirements in northeast Florida.

[3] An Amphibious Ready Group typically consists of an Amphibious Assault Ship, Amphibious Transport Dock Ship, and a Dock Landing Ship and is designed to embark, deploy, and land elements of a landing force containing helicopters, landing craft, and amphibious vehicles.

Florida.[4] Section 1017 required the Navy to include in its analysis, at a minimum, the following three considerations:

1. consideration of the negative effects on the ship repair industrial base at Naval Station Mayport caused by the retirement of FFG-7 class frigates and the procurement delays of the Littoral Combat Ship, including, in particular, the increase in costs (which would be passed on to the taxpayer) of reconstituting the ship repair industrial base at Naval Station Mayport following the projected drastic decrease in workload;
2. updated consideration of life extensions of FFG-7 class frigates in light of continued delays in deliveries of the Littoral Combat Ship; and
3. consideration of the possibility of bringing additional surface warships to Naval Station Mayport for maintenance with the consequence of spreading the ship repair workload appropriately amongst the various public and private shipyards and ensuring the long-term health of the shipyard in Mayport.[5]

In addition, Section 1017 required us to submit an assessment of the Navy's report, including a determination of whether it complied with applicable best practices.[6] The Navy submitted the report containing its analysis to Congress on December 31, 2012. [7] To assist Congress in its assessment of the Navy's plans regarding Naval Station Mayport, our objectives were to describe the extent to which the Navy's analysis (1) demonstrated the use of applicable best practices for an analysis of costs and benefits and (2) provided information on other considerations, as required by Section 1017.

To determine the extent to which the Navy's analysis regarding stationing additional DDG-51 class destroyers at Naval Station Mayport

[4] Pub. L. No. 112-81, § 1017(a)(1) (2011). The National Defense Authorization Act for Fiscal Year 2012 was enacted on December 31, 2011. In this report, we refer to the relevant provision as "section 1017."

[5] § 1017(a)(2). We provided a draft of this report to your offices on April 30, 2013 to satisfy the requirement.

[6] *See* § 1017(b).

[7] Department of the Navy, *Report to Congress, Assessment on Ship Repair Industrial Base of Stationing of Additional DDG-51 Class Destroyers at Naval Station Mayport*, Dec. 31, 2012.

demonstrated best practices for an analysis of costs and benefits, we identified the following applicable best practices for an analysis of costs and benefits: clearly-defined background and objectives, an explanation of assumptions that affect the analysis, a description of alternatives, an estimate of the life-cycle costs and life-cycle benefits associated with each alternative, an uncertainty analysis, and a comparison and ranking of alternatives to arrive at a recommendation. These best practices and how we derived them are discussed later in the report. In addition, although we did not independently verify the data used by the Navy in its analyses, we reviewed documentation the Navy used to prepare its analysis of costs and benefits, and we discussed the Navy's methodology and data reliability with knowledgeable officials. To determine the extent to which the Navy's analysis provided information on other considerations, as required of the Department by Section 1017, we reviewed the information provided in the Navy's analysis with documentation we obtained from the Navy and in discussions with Navy officials at Navy headquarters in Washington, D.C. We also visited Naval Station Mayport and met with Navy officials there as well as with representatives from local private ship repair industrial base firms. We determined that the Navy's data were sufficiently reliable for our purposes.

We conducted this performance audit from February 2013 through May 2013 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit and obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. Additional details regarding our scope and methodology can be found in appendix I.

## Background

The Navy has identified Naval Station Mayport, Florida—located in northeast Florida, on the Atlantic Coast, near Jacksonville, roughly 469 nautical miles south-southwest of Norfolk, Virginia—as a key east-coast location for different types of ship force structure, such as the DDG-51 class destroyers, the Amphibious Ready Group, and the Littoral Combat Ship. Naval Station Mayport has grown to become the third largest naval fleet concentration area in the United States and the second largest on the east coast. Until 1994, Naval Station Mayport was a homeport to two conventional aircraft carriers and 30 or more surface ships (including both steam and gas turbine-powered) all supported by the local private ship repair firms. Since 1994, the Navy has been reducing the number of ships

at Naval Station Mayport, but according to the Navy, the local private ship repair firms in northeast Florida have repeatedly adjusted their capability and capacity regarding the evolving naval force structure.

The private ship repair firms provide depot-level maintenance[8] for the Department of the Navy, which generally consists of maintaining many complex weapon systems—such as many types of ships—and equipment—such as generators and radars—that require regular and emergency maintenance to continue to be available for the Department of Defense (DOD) to meet national security goals. Appendix II provides information on the three master ship repair firms in northeast Florida area that support maintenance of Navy ships at Naval Station Mayport.

In addition, since 2010, we have issued five reports on issues related to basing and maintenance issues at Naval Station Mayport, including a report[9] evaluating a 2010 Navy report on the ability of the private ship maintenance industrial base in northeast Florida to support nuclear-powered aircraft carrier maintenance requirements at Mayport. Our previous reports are listed at the end of this report.

[8] Depot-level maintenance was recently redefined as material maintenance or repair requiring the overhaul, upgrading, or rebuilding of parts, assemblies, or subassemblies, and the testing and reclamation of equipment as necessary, regardless of the source of funds for the maintenance or repair or the location at which the maintenance or repair is performed. The term includes all aspects of software maintenance classified by DOD as of July 1, 1995, as depot-level maintenance and repair, as well as interim contractor support or contractor logistics support (or any similar contractor support), to the extent that the support is for the performance of the services described in the previous sentence. Depot-level maintenance does not include the procurement of major modifications or upgrades of weapon systems designed to improve program performance, nor the nuclear refueling or defueling of an aircraft carrier and any concurrent complex overhaul. The term does not include procurement of parts for safety modifications but would include installation of parts for that purpose. *See* 10 U.S.C. § 2460 (amended by the National Defense Authorization Act for Fiscal Year 2013, Pub. L. No. 112-239, § 322(a)(1), (b)(1), (c) (2013)).

[9] GAO, *Defense Infrastructure: Ability of Ship Maintenance Industrial Base to Support a Nuclear Aircraft Carrier at Naval Station Mayport*, GAO-11-388R (Washington, D.C.: Mar. 29, 2011).

## The Navy's Analysis of the Costs and Benefits of Stationing Additional DDG-51 Class Destroyers Demonstrated Some Applicable Best Practices

The Navy's analysis of the costs and benefits of moving the DDG-51 class destroyers to Naval Station Mayport demonstrated some applicable best practices. We researched best practices for an analysis of costs and benefits to determine whether the Navy's analysis demonstrated them. Based on our evaluation, we determined that the Navy's analysis demonstrated three, partially demonstrated three, and did not demonstrate two of the eight applicable best practices we identified.

In researching best practices for an analysis of costs and benefits, we found a recent Navy guide that presents best practices for an economic analysis including an analysis of costs and benefits to help inform Navy and Marine Corps resource allocation decisions. The Navy's guide contains applicable best practices consistent with those found in prior GAO work and the publications of other agencies, including DOD.[10] The Navy's guide focuses not just on estimating costs, but presents a framework and method of comparing alternative ways of achieving a given objective. From the Navy's guide, we identified the following best practices for an economic analysis including an analysis of costs and benefits:

*1. Problem Statement/Background* - The analysis should clearly define the problem, requirement, or opportunity to be analyzed; explain why an analysis is being done; and provide background information to put the problem in context. The Problem Statement should explain the purpose of the analysis and the framework for its recommendation.

*2. Objective* – The analysis should clearly define and quantify (to the extent possible) what the project or program under study seeks to attain.

*3. Key Facts and Assumptions* – The analysis should include both key facts and assumptions. Key facts—such as laws, defined criteria, ground

[10] GAO, *GAO Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Capital Program Costs,* GAO-09-3SP (Washington, D.C.: March 2009); and Department of the Navy, *Economic Analysis Guide* (Feb. 26, 2013). The Navy's Economic Analysis Guide presents best practices, expanding on those found in DOD Instruction 7041.3, *Economic Analysis for Decisionmaking* and Office of Management and Budget Circular A-94, *Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs*. The Navy's guide was published after the Navy's report; however we used it in reviewing the Navy's report since the guide reflects applicable best practices identified in similar guides published before the Navy conducted the analysis published in its Mayport report.

rules, constraints, regulations, and DOD guidance—are factors known to be true that may affect the current or future conditions under consideration in the analysis. Assumptions are what one believes, but does not know, about the future conditions that could affect the analysis. One makes assumptions when lacking reliable knowledge to assign values or probabilities to factors influencing decisions. The reasonableness and validity of assumptions, as well as the need for new assumptions, should be periodically re-assessed throughout the course of the analysis. Only necessary and reasonable assumptions should be included in an economic analysis.

*4. Alternatives/Courses of Action* – The analysis should discuss various methods of attaining the stated objective, with a full description of each. It should also fully explain what each alternative involves, especially those things that drive costs and benefits. Explain how each process or procedure would work; what personnel, equipment, or facilities would be required; and what other changes would be involved. The analysis should describe each alternative completely, so that someone unfamiliar with the alternative can fully understand it and what would be involved in its implementation. At a minimum, the description of each alternative should include all things resulting in costs to the government.

*5. Cost Analysis* – The analysis should estimate the life-cycle costs associated with each alternative. Life-cycle costs are the costs to the government for a system over its full life, including the cost of development, procurement, operation, support and disposal.

*6. Benefit Analysis* – The analysis should estimate the life-cycle benefits associated with each alternative. Benefits can include monetary and non-monetary benefits.

*7. Uncertainty Analysis* - The analysis should discuss any uncertainties related to costs and benefits. Estimates of costs and benefits contain uncertainties because of imprecision in both underlying data and assumptions. Since estimating errors can be introduced into the analysis in these ways, the analysis must consider the effect that potential errors could have on the analysis and its recommended alternative. Information useful in an analysis of uncertainty includes the key sources of uncertainty and the sensitivity of analysis results to the primary sources of uncertainty.

*8. Comparison of Alternatives and Recommendation* - Once all the costs and benefits of each alternative have been estimated, the analysis must

compare and rank the alternatives to arrive at a recommended alternative.

We evaluated the Navy's use of these best practices for the portion of its report assessing the costs and benefits of stationing additional DDG-51 class destroyers at Naval Station Mayport. Our evaluation of the Navy's analysis is summarized in table 1 below.

**Table 1: Evaluation of the Navy's Analysis of Costs and Benefits**

| Applicable best practices for an analysis of costs and benefits | Our evaluation[a] |
|---|---|
| 1. Problem statement/background are clearly defined | Demonstrated |
| 2. Objectives are clearly defined | Demonstrated |
| 3. Key facts and assumptions are included | Demonstrated |
| 4. Alternatives are described | Not demonstrated |
| 5. Costs include estimated life-cycle costs | Partially demonstrated |
| 6. Benefits include estimated life-cycle benefits | Partially demonstrated |
| 7. Uncertainties are identified and discussed. | Partially demonstrated |
| 8. Alternatives are compared and ranked, leading to recommendations | Not demonstrated |

Source: GAO assessment of Navy's December 2012 report's analysis of costs and benefits.

[a] For the purposes of our analysis, we determined that a best practice was "demonstrated" if the Navy's analysis contained documentation showing that the Navy followed the best practice for an analysis of costs and benefits. We determined that a best practice was "partially demonstrated" if the Navy's analysis in part followed an applicable best practice for an analysis of costs and benefits. If the Navy's analysis did not use the best practice, we determined that the Navy's use of the best practice for an analysis of costs and benefits was "not demonstrated."

## Applicable Best Practice 1: Problem Statement/Background

Demonstrated - The Navy's report included the language of Section 1017 from the National Defense Authorization Act for Fiscal Year 2012. In addition, the background section included the Navy's views on homeport assignments to balance strategic and operational requirements. For example, the background noted that Naval Station Mayport is a critical strategic east coast naval base and is part of the long term maintenance and modernization strategy for the Navy.

## Applicable Best Practice 2: Objectives

Demonstrated – Section 1017 required the Secretary of the Navy to conduct an analysis of the costs and benefits of stationing additional DDG-51 class destroyers at Naval Station Mayport, Florida. Therefore, this is the objective for the Navy's analysis of costs and benefits. The Navy's report showed an analysis of costs and benefits for moving three DDG-51 class destroyers from Naval Station Norfolk to Naval Station Mayport and results in five DDG-51 class destroyers in fiscal year 2013,

| | |
|---|---|
| | seven in fiscal year 2014, and six from fiscal years 2015 through 2017, which will be located at Mayport. |
| Applicable Best Practice 3: Key Facts and Assumptions | Demonstrated - The report's analysis of costs and benefits included key facts, such as the Navy's current plan to move three DDG-51 class destroyers from Naval Station Norfolk to Naval Station Mayport and to move one DDG-51 destroyer from Naval Station Mayport to a forward-deployed port in Rota, Spain. In addition, the report's analysis included key assumptions such as the timeframe for the intended movements of the ships to Mayport, the additional estimated costs to the Navy's operations and maintenance budget; one-time permanent change of station costs; and savings based on the lower basic allowance for housing rate at Naval Station Mayport as compared with Naval Station Norfolk. For example, the Navy's report noted the planned movement of the DDG-51 class destroyers from Naval Station Norfolk to Naval Station Mayport during fiscal years 2013 through 2014, but it noted that the dates were not yet finalized. Additionally, the report's analysis included assumptions about the estimated increased labor rates and utility costs in Mayport—specifically, that the maintenance work day rate and utility cost are about 8 percent and 60 percent higher at Naval Station Mayport, respectively, than at Naval Station Norfolk. In addition, the report's analysis included the dollar amounts of the combined effect of the differences in the Navy's operation and maintenance and its military personnel budgets from fiscal year 2013 through fiscal year 2017. Furthermore, the report included a statement about the limitation of its analysis. Specifically, the report's analysis considered only the ships and crews and does not include implementation or sustainment costs for facilities. |
| Applicable Best Practice 4: Alternatives | Not Demonstrated – As noted above, the objective was the analysis of the costs and benefits of stationing additional DDG-51 class destroyers at Naval Station Mayport, Florida. While the report's analysis provides a description of the planned movement of three DDG-51 class destroyers from Naval Station Norfolk to Naval Station Mayport, it does not consider alternatives such as whether additional DDG-51 class destroyers from Naval Station Norfolk—or those currently stationed at Naval Station San Diego, California; Naval Station Everett, Washington; or Naval Station Pearl Harbor, Hawaii—could be moved to Naval Station Mayport. |

| | |
|---|---|
| Applicable Best Practice 5: Cost Analysis | Partially Demonstrated - The report's analysis provided estimated costs to move three DDG-51 class destroyers from Naval Station Norfolk to Naval Station Mayport from fiscal years 2013 through 2017. For example, the report's analysis estimated that, in fiscal year 2013, it will cost the Navy $0.35 million more in recurring costs for maintenance and utilities and a $1.1 million one-time, permanent change of station cost to move one DDG-51 destroyer and its crew and their dependents from Naval Station Norfolk to Naval Station Mayport. Over fiscal years 2013 – 2017, the Navy estimated the additional recurring costs for maintenance, utilities, and a one-time permanent change of station cost to be about $11.34 million to move the DDG-51 class destroyers to Mayport. As noted above, while the report included an analysis of the costs related to the ship and the crew, it did not include implementation or sustainment costs for facilities. In addition, applicable best practices call for including the estimated life-cycle costs as well as estimated recurring—annual or periodic—and one-time costs. The report reflected the estimated recurring and one-time costs from fiscal years 2013 through 2017 but not the total life-cycle costs over the estimated 35-year or 40-year service life of the DDG-51 class destroyers.[11] |
| Applicable Best Practice 6: Benefit Analysis | Partially Demonstrated - The Navy report's analysis estimated that, beginning in fiscal years 2013 through 2017, the Navy will reap estimated savings of $9.44 million due to the lower basic allowance for housing at Naval Station Mayport compared to Naval Station Norfolk. Therefore, according to the report's analysis, over fiscal years 2013 through 2017, the net cost to move the three DDG-51 class destroyers will be $1.89 million. The report also noted that the DDG-51 class destroyers the Navy intends to move to Mayport would provide additional workload[12] for the private ship repair firms. The report's analysis did not discuss the quantifiable benefits or estimated savings over the 35-year or 40-year life cycle of the DDG-51 class destroyer to Naval Station Mayport. |

[11] DDG 51 Flights I and II have an expected service life of 35 years; DDG 51 Flight IIA has an expected service life of 40 years.

[12] In this report, we use the term workload to refer to the amount of work performed by the ship repair industrial base on Navy ships.

| | |
|---|---|
| Applicable Best Practice 7: Uncertainty Analysis | Partially Demonstrated – The Navy report's analysis identified timeframes and estimated costs as key assumptions for moving the DDG-51 class destroyers to Mayport. While the report stated that a final decision on specific dates for ships moving to Naval Station Mayport has not been made, the report did not discuss how uncertainty regarding these dates could affect estimated costs and benefits. |
| Applicable Best Practice 8: Comparison of Alternatives and Recommendation | Not Demonstrated - Because the Navy report's analysis did not describe any alternatives to the planned movement of the DDG-51 class destroyers from Naval Station Norfolk to Naval Station Mayport, the analysis could not compare alternatives or make any recommendations about the alternatives. |

## The Navy's Report Minimally Addressed Other Requirements and Did Not Include Some Additional Information That Would Have Benefitted Oversight and Decision Making

Section 1017 specified other considerations to be included in the Navy's analysis. Based on our assessment, the Navy's report minimally addressed these requirements and it did not include some additional information that—while not required by the provision—would have been useful for congressional oversight and decision making. Table 2 describes the information provided by the Navy and our assessment.

**Table 2: Information Provided in the Navy's Analysis and Our Assessment**

| Information required | Our assessment |
|---|---|
| Consideration of the negative effects on the ship repair industrial base at Naval Station Mayport caused by the retirement of FFG–7 class frigates and the procurement delays of the Littoral Combat Ship, including, in particular, the increase in costs (which would be passed on to the taxpayer) of reconstituting the ship repair industrial base at Naval Station Mayport following the projected drastic decrease in workload. | • The Navy provided an explanation of the retirement of the FFG-7 class frigates at Naval Station Mayport, and it discussed one negative effect—that work days would be lost due to the retirements of the frigates. In addition, the Navy concluded that the maintenance work days lost when six FFG-7 class frigates are retired will be approximately compensated with the arrival of the three-ship amphibious ready group at Naval Station Mayport beginning in fiscal year 2014.<br>• The Navy provided an overview of the Navy's projected inventory of the FFG-7 class frigates and Littoral Combat Ships from fiscal year 2013 through 2017, including the remaining frigates that could help to mitigate the near term impact of the gradual introduction of Littoral Combat Ships, some of which are planned to be stationed at Naval Station Mayport beginning in fiscal year 2016.<br>• The Navy stated that, in the mid to long term, the Navy's planned force structure would provide a gradual increase to the workload to the private ship repair industry at Naval Station Mayport and stated that minimizing the reconstitution of the ship repair capability and capacity helps to keep costs down for the Navy.<br>• We found that the Navy did not<br>o explicitly discuss the potential for negative effects that the reduction in workdays caused by the retirement of the FFG-7 class frigates could have on the ship repair industrial base at Naval Station Mayport,<br>o thoroughly describe the cost of reconstituting the ship repair industrial base at Naval Station Mayport following any decrease in workload caused by the retirement of the FFG-7 class frigates, or<br>o explicitly acknowledge whether procurement delays existed with the Littoral Combat Ship and what effect, if any, a procurement delay would have on the ship repair industrial base at Naval Station Mayport. |
| Updated consideration of life extensions of FFG–7 class frigates in light of continued delays in deliveries of the Littoral Combat Ship. | • The Navy provided a high-level discussion of its updated consideration of extending the service life of the FFG-7 class frigates. The Navy concluded that extending the service life of the FFG-7 class frigates would be cost prohibitive, but the report relied on 2010 data that was not updated to reflect current circumstances. |

| Information required | Our assessment |
|---|---|
| Consideration of the possibility of bringing additional surface war ships to Naval Station Mayport for maintenance with the consequence of spreading the ship repair workload appropriately amongst the various public and private shipyards and ensuring the long-term health of the shipyard in Mayport. | • The analysis discussed the Navy's intention to transfer a three-ship amphibious ready group and planned moves of the new Littoral Combat Ships and the patrol coastal craft to Naval Station Mayport.<br>• The analysis stated that the Navy strives to maintain a steady maintenance workload in all its homeports in order to maintain the industrial infrastructure and support a stable, well-trained workforce and that the force structure plan is expected to provide a consistent and gradually increasing workload.<br>• The Navy states that it is difficult to assess the impact on the ship repair industry of a home port until specific ship moves are finalized.<br>• We found that the analysis did not specifically address the effect that planned surface ship movements could have on spreading the ship repair workload among the various public and private shipyards. |

Source: GAO assessment of Navy's December 2012 report.

Additional information regarding how any procurement delays of the Littoral Combat Ship might affect the decommissioning schedule of the FFG-7 class frigates would have been beneficial to include in the Navy's analysis. For example, Navy officials told us that the Navy could consider slowing down the process of decommissioning the FFG-7 class frigates if delivery of the Littoral Combat Ships is delayed by a significant amount of time, but the Navy's analysis did not fully discuss that option. Additional information on the views of officials from the private ship repair firms at Mayport—particularly regarding the effect that any projected decrease in workload would have on the cost to reconstitute the industrial base at Mayport—would have been beneficial but was not included.

## Agency Comments

We are not making recommendations in this report. DOD and the Department of the Navy reviewed a draft of this report and did not have formal comments. The Navy provided technical comments that were incorporated as appropriate in the report.

We are sending copies of this report to appropriate congressional committees, the Secretary of Defense, the Secretary of the Navy, and the Director of the Office of Management and Budget. This report also is available at no charge on our Web site at http://www.gao.gov.

If you or your staff have any questions about this report, please contact me at (202) 512-4523 or leporeb@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made major contributions to this report are listed in appendix III.

Brian J. Lepore
Director
Defense Capabilities and Management

*List of Committees*

The Honorable Carl Levin
Chairman
The Honorable James M. Inhofe
Ranking Member
Committee on Armed Services
United States Senate

The Honorable Dick Durbin
Chairman
The Honorable Thad Cochran
Ranking Member
Subcommittee on Defense
Committee on Appropriations
United States Senate

The Honorable Howard P. “Buck” McKeon
Chairman
The Honorable Adam Smith
Ranking Member
Committee on Armed Services
House of Representatives

The Honorable C.W. Bill Young
Chairman
The Honorable Pete Visclosky
Ranking Member
Subcommittee on Defense
Committee on Appropriations
House of Representatives

# Appendix I: Objectives, Scope, and Methodology

Our objectives were to describe the extent to which the Navy's analysis, contained in its December 31, 2012 report to Congress (1) demonstrated the use of applicable best practices for an analysis of costs and benefits and (2) provided information on other considerations, as required by section 1017.

As part of our review to determine whether the Navy's analysis regarding stationing additional DDG-51 class destroyers at Naval Station Mayport demonstrated best practices for an analysis of costs and benefits, we reviewed documentation the Navy used to prepare its analysis, discussed the Navy's methodology with knowledgeable officials, and interviewed relevant Navy officials regarding the reliability and accuracy of the data and the Navy's internal review of its analysis and subsequent December 2012 report. We then compared the Navy's analysis to the best practices we identified.[1] For the purposes of our assessment, we determined that a best practice was "demonstrated" if the Navy's analysis contained documentation showing that the Navy followed the best practice for an analysis of costs and benefits. We determined that a best practice was "partially demonstrated" if the Navy's analysis in part followed an applicable best practice for an analysis of costs and benefits. If the Navy's analysis did not use the best practice, we determined that the Navy's use of the best practice for an analysis of costs and benefits was "not demonstrated."

To determine whether the Navy's analysis provided information on other considerations required in section 1017, we reviewed the Navy's analysis and compared it to the provisions within section 1017. We obtained and reviewed the supporting documentation the Navy used to prepare its analysis, including depot-level maintenance availabilities and work-day data for the DDG-51 found in the Office of the Chief of Naval Operations Notice 4700.[2] In addition, we interviewed Chief of Naval Operations and Naval Sea Systems Command officials regarding the reliability and accuracy of the data and about the Navy's internal review of its report to Congress. We determined that the Navy's data were sufficiently reliable

[1] See the main body of the report for a discussion of the best practices we identified and how we applied them.

[2] Office of the Chief of Naval Operations Notice 4700, *Representative Intervals, Durations, and Repair Mandays for Depot Level Maintenance Availabilities of U.S. Navy Ships* (Aug. 11, 2011).

for our purposes. Additionally, we visited Naval Station Mayport and met with officials from the base's command staff and the Navy's Southeast Regional Maintenance Center, which provides surface ship maintenance and repair support to U.S. Navy ships in the southeast region of the United States. We also met with the Jacksonville Area Ship Repair Association, which is comprised of representatives from local area's private ship repair firms supporting ship maintenance at Naval Station Mayport, to obtain an understanding of the impact of the decommissioning of the FFG-7 class frigates and the decreases in the depot-level maintenance work days at Mayport.

We conducted this performance audit from February 2013 through May 2013 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit and obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

# Appendix II: Information on Master Ship Repair Firms in Northeast Florida Supporting Naval Station Mayport

The northeast Florida area has three master ship repair firms—BAE Systems Southeast Shipyards Jacksonville, General Dynamics NASSCO, and North Florida Shipyards, Inc.— certified by the Navy as having the capabilities and capacity required to perform maintenance and modernization on all Navy ships. There are a number of smaller, specialized firms that provide support to these master ship repair firms at Mayport. The following is a description of the capabilities and capacity of these master ship repair firms.

BAE Systems is the largest of the three master ship repair firms in northeast Florida. It has modern ship repair facilities located adjacent to Wharf F at Naval Station Mayport. These facilities are fully dedicated to supporting Navy vessels. BAE Systems also maintains an administrative facility at Naval Station Mayport to execute support functions such as solicitation, execution planning, and program management. The facilities at Naval Station Mayport include the following trade shops: pipe, welding, electric, rigging, paint, pump, sheet metal, insulation, and warehouse.

In addition to the facilities located at Naval Station Mayport, BAE Systems also has substantial capabilities at its Jacksonville shipyard. The Jacksonville shipyard is just across the St. John's River from Naval Station Mayport, less than 5 miles by car. The facility performs both Navy and commercial work. Three Naval Sea Systems Command certified dry docks are located at this facility, including a 4,000-ton marine railway and a 13,500-ton dry dock capable of docking cruiser and destroyer class ships. The Jacksonville shipyard facilities and equipment are available to Naval Station Mayport if needed. As of March 2013, BAE Systems employs approximately 600 full-time ship repair personnel at its Naval Station Mayport and Jacksonville repair facilities combined. In March 2011, BAE had 800 full-time ship repair personnel at these two locations.

The facilities at General Dynamics NASSCO Mayport (formerly Earl Industries) [1] were designed specifically to support Navy ship repair. The 2-acre compound occupied by General Dynamics NASSCO Mayport, adjacent to Wharf F, includes a fully equipped machine shop, structural shop, electrical clean room, sheet metal shop, and pipe shop. Additionally, a fully equipped 30,000-square foot production building

[1] As of August 1, 2012, Earl Industries LLC was purchased, renamed, and is now operated by General Dynamics NASSCO.

constructed in fiscal year 2005 is located 500 yards from the piers. This facility was designed to support aircraft carrier maintenance requirements; however, since the decommissioning of the USS John F. Kennedy in 2007, the building has not been utilized to its full capabilities. General Dynamics NASSCO Mayport also maintains mobile, containerized tool rooms and shop facilities that are readily transportable to the wharf job site. General Dynamics NASSCO Mayport also has a lease on a 10,000-square foot warehouse and 2 more acres of temporary storage area a half-mile outside the Naval Station's main gate. For several years General Dynamics NASSCO Mayport employed about 250 personnel—150 of its own employees augmented by 100 personnel from sub-contracted labor. As of March 2013, General Dynamics NASSCO Mayport has reduced its work force to 90 personnel and has alerted 65 additional personnel regarding reductions in work days.

North Florida Shipyards has a 60,000-square foot facility located on 2.5 acres adjacent to Wharf F on Naval Station Mayport. This facility houses a fabrication shop, pipe shop, machine shop, electric shop, crane and rigging shop, paint shop, and material storage warehouse. In addition to the Mayport facility, North Florida Shipyards also has a commercial facility located at Commodore Point in Jacksonville, Florida. This facility has additional capabilities and equipment that are available to support Navy work being performed at Naval Station Mayport if needed. The Jacksonville facility has a 2,800 ton certified dry-dock and a 600 metric ton certified Travelift,[2] each capable of dry-docking smaller naval vessels and barges. North Florida Shipyards employs approximately 15 full-time ship repair personnel at its Naval Station Mayport and 75 full-time ship repair personnel at its Jacksonville locations. In March 2011, we reported that North Florida shipyard had 235 full-time ship repair personnel at its Naval Station Mayport and Jacksonville locations combined.[3]

[2] Marine equipment used to lift boats and ships out of the water for service and repair at the shipyard.

[3] GAO, *Defense Infrastructure: Ability of Ship Maintenance Industrial Base to Support a Nuclear Aircraft Carrier at Naval Station Mayport*, GAO-11-388R (Washington, D.C.: Mar. 29, 2011).

# Appendix III: GAO Contact and Staff Acknowledgments

## GAO Contact

Brian J. Lepore, (202) 512-4523 or leporeb@gao.gov

## Staff Acknowledgments

In addition the contact named above, Mark J. Wielgoszynski, Assistant Director; Pat L Bohan, Susan Ditto, Brandon Jones, Carol Petersen, and Michael Shaughnessy made key contributions to this report.

# Related GAO Products

*Defense Infrastructure: The Navy's Use of Risk Management at Naval Stations Mayport and Norfolk.* GAO-12-710R. Washington, D.C.: July 13, 2012.

*Defense Infrastructure: Ability of Ship Maintenance Industrial Base to Support a Nuclear Aircraft Carrier at Naval Station Mayport.* GAO-11-388R. Washington, D.C.: March 29, 2011.

*Defense Infrastructure: Navy Can Improve the Quality of Its Cost Estimate to Homeport an Aircraft Carrier at Naval Station Mayport.* GAO-11-309. Washington, D.C.: March 3, 2011.

*Depot Maintenance: Navy Has Revised Its Estimated Workforce Cost for Basing an Aircraft Carrier at Mayport, Florida.* GAO-11-257R. Washington, D.C.: March 3, 2011.

*Defense Infrastructure: Opportunities Exist to Improve the Navy's Basing Decision Process and DOD Oversight.* GAO-10-482. Washington, D.C.: May 11, 2010.